

REMARKS/ARGUMENTS

Claims 49, 51-53, 63-65, 86-90, 101, 105-113, 120-127, 130-134, 137-141, and 144-149 are pending in the present application. Independent claims 49, 64 and 86 and dependent claims 63, 65, 87, 105-107, 120 and 125-127 have been amended. Claims 50, 54-62, 66-85, 91-100, 102-104, 114-119, 128-129, 135-136, and 142-143 have been canceled. Applicants make these amendments for economy and not to disclaim any part of the invention. Reconsideration of the present application is respectfully requested in light of the foregoing amendments and following remarks.

INTERVIEW

Applicants acknowledge receipt of the Interview Summary mailed June 11, 2004. As set forth in the Interview Summary, during the telephonic interview, all claims were discussed in view of the cited art. During the interview, Applicants proposed amendments to clarify the 35 U.S.C. § 112 second paragraph issues that would better describe the sample presenting structure and claim laser desorption of the sample. The Examiner agreed that the proposed amendments further the prosecution of the application. The Examiner stated that he would like the opportunity to further consider and search the claims as amended with the added elements upon formal submission. Applicants are herein formally submitting the proposed amendments.

STATUS

As confirmed by Examiner Alexander during a telephone conversation on June 17, 2004, the present application is (1) not abandoned, (2) pending, and (3) a response is due to the office action mailed February 10, 2004. The Examiner verified that the previous Notice of Abandonment that was sent to Fulbright and Jaworski, LLP on November 04, 2003 was improperly issued and, consequently, internally corrected in December 2003; therefore, the present patent application is pending.

I. Claim Rejections - 35 USC § 112

Claims 49-53, 56-57, 60-61, 63-71, 75-76, 82, 87-91, 94-95, 104-113, 120-127, 130-141, 144-148 have been rejected under 35 U.S.C. § 112, second paragraph, for allegedly being indefinite. In order to further the prosecution of the application, Applicants have amended claims 49, 64 and 86 without acquiescence and prejudice as set forth above. Applicants have amended the claims so that instead of using the "*wherein the probe for presenting the analyte is not associated with a separate sample holder*" limitation, the probe is claimed as a "**removably insertable rigid and structurally self-supporting probe...**" Support for this element can be found in the published patent application (US 2001/0023074 A1) in paragraphs [43], [49], [51], [52], and [84-88]. Furthermore, considering that dependent claims 50-53, 56-57, and 63, 105-107, 120, 125, and 130-134 include all of the features and elements of amended claim 49 from which they depend, these claims are also patentable to the same extent that amended independent claim 49 is patentable. In addition, considering that claims 65-71, 75-76, 82, 108-110, 121-122, 126, and 137-141 include all of the features and elements of amended claim 64 from which they depend, these claims are also patentable to the same extent that amended independent claim 64 is patentable. Additionally, considering that claims 87-91, 94-95, 101, 111-113, 123-124, 127 and 144-148 include all of the features and elements of amended claim 86 from which they depend, these claims are also patentable to the same extent that amended independent claim 86 is patentable.

II. Claim Rejections - 35 USC § 102

Claims 49, 64, 67-71, 86, 126-127 and 136 have been rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Westlake et al. (USP 5,317,932). The Office Action states that "Westlake et al. in column 2 lines 10-17 characterize Brodbelt et al. as teaching a mass spectrometric determination of in vivo analytes by use of a single nylon sample probe." Applicants respectfully disagree with this rejection in view of the claim amendments set forth above and reasons set forth below. Applicants respectfully submit that the Examiner's Section 102(e) rejection of the claims is based on an incorrect understanding of the Brodbelt publication.

A review of the Brodbelt publication shows that the Brodbelt probe is a non-rigid hollow fiber silicon tubing membrane probe that is supported internally over a portion of its length by the insertion of nylon monofilament. The nylon monofilament provides mechanical strength for the delicate silicon capillary tubing. The membrane is coupled with one end of a large piece of Teflon tubing. The other end of the Teflon tubing is attached to the inlet of a mass spectrometer. Brodbelt does not disclose a single nylon sample probe, as suggested by the Examiner.

In addition, as amended, claims 49, 64 and 86 include a probe element that is directed to ...a rigid and structurally self-supporting probe that is removably insertable into a laser desorption ionization mass spectrometer ("LDI-MS"). Applicants respectfully submit that amended claims 49, 64 and 86 are not anticipated by the Westlake reference, since Westlake does not disclose such a probe element. The Westlake and Brodbelt references do not teach a probe that is structurally self-supporting and removably insertable into a LDI-MS, in fact, they teach the use of a Gas Chromatography Coupled Mass Spectroscopy ("GCMS") device (see discussion of Apparatus in Brodbelt). The Brodbelt membrane which is not structurally self-supporting is coupled with the inlet of a GCMS, and is not removably insertable into an LDI-MS. Furthermore, considering that claims dependent from claims 49, 64 and 86 include all of the features and elements of amended claims 49, 64 and 86 from which they depend, these claims are also patentable to the same extent that amended independent claims are patentable.

III. Claim Rejections - 35 USC § 103 - DE 3221681

Claims 49-50, 52, 56-57, 63-67, 69-71, 75-76, 82, 86-87, 90-91, 94-95, 101, 105-113, 120-127, 130-134, 137-141 and 144-148 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over DE 3221681. In light of the Section 112 rejections, the Office Action alleges that "the claims are best understood as teaching a single probe for supporting the sample in the mass spectrometer which has been clearly taught by DE."

In light of the above claim amendments, Applicants respectfully submit that the pending claims are not obvious over the DE reference for reasons set forth below. Applicants

respectfully submit that the DE reference does not teach or suggest the presently claimed probe element, since the DE thin polymer film is one part of the two-piece assembly which relies on a separate large metallic holder for both structural and functional support, while the presently-claimed probe element is directed to a one-piece rigid and structurally self-supporting probe having a non-metallic surface. In addition, the thin polymeric film of DE is kept outside the mass spectrometer, while the presently-claimed probe element is drawn to one that is inserted into a mass spectrometer. For these reasons, Applicants respectfully submit that the pending claims are not obvious over the DE reference. Furthermore, considering that claims dependent from claims 49, 64 and 86 include all of the features and elements of amended claims 49, 64 and 86 from which they depend, these claims are also patentable to the same extent that amended independent claims are patentable.

IV. Claim Rejections - 35 USC § 103 - Cerami

Claims 49, 64, 65-71, 80, 86, 126-127 and 129 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Cerami. The Office Action alleges that "Cerami in column 11, lines 48+, discloses a mass spectrometry apparatus using a ceramic probe tip to present the sample." The Office Action goes on to allege that it would have been within the skill of the art to modify Cerami and use polymeric materials such as those claimed.

In light of the above claim amendments, Applicants respectfully submit that the pending claims are not obvious over the Cerami reference for the reasons set forth below. Applicants respectfully submit that Cerami is directed to a ceramic probe for chemical ionization (low resolution) and a combined electron impact/chemical ionization (high resolution) mass spectrometry. In this connection, Cerami discloses a ceramic probe for low resolution and a glass capillary probe for the high resolution measurements. In both cases, isobutane was used as a reactant gas. Applicants respectfully submit that one skilled in the art would not modify Cerami and use polymeric materials, because to do so would adversely impact and destroy the functionality of the chemical ionization of the sample, as it is one understanding that a polymeric probe surface (as opposed to a ceramic or glass probe surface) would interfere with the chemical

ionization of the fluorescent chromophore iosalte. In addition, Applicants respectfully submit that the amended claims include a probe element that is directed to "**...a rigid and structurally self-supporting probe that is removably insertable into a laser desorption ionization mass spectrometer,**" which is not disclosed or suggested by the Cerami reference - Cerami does not teach or suggest using the claimed probe in an LDI instrument, as set forth above. For these reasons, Applicants respectfully submit that pending claims 49, 64, 65-71, 80, 86, 126-127 and 129 are not obvious over the Cerami reference.

V. Claim Rejections - 35 USC § 103 - Cerami/Westlake and Stuke

Dependent claims 50, 52, 56-57, 60-61, 63, 75-76, 82, 87-91, 94-95, 101, 104-113, 120-125, 130-34, 137-141, and 144-149 have been rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Cerami or Westlake in View of Stuke (U.S. Patent No. 4,686,366). Applicants respectfully disagree for the reasons set forth below. Applicants respectfully submit that for the reasons set forth above, amended independent claims 49, 64 and 86 are patentable over either the Westlake or Cerami references. Applicants respectfully submit that the deficiencies of these primary references are not overcome by the Stuke disclosures. Neither the Westlake, Cerami or a putative combination of Westlake and Stuke or Cerami or Stuke teach or suggest the elements of the amended claims for the reasons set forth above, since none of the references or combination of these references as suggested by the Examiner teach or suggest a probe having an element that is directed to **a rigid and structurally self-supporting probe that is removably insertable into a laser desorption ionization mass spectrometer.**" Therefore, Applicants request that the Examiner withdraw this Section 103(a) rejection.

VI. Allowable Subject Matter

Claims 51, 53, 88 and 89 have been objected to as being dependent upon a rejected base claim, but are allowable if rewritten in independent form including all of the elements of their bases claim and any intervening claims. Applicants are pleased that the Examiner has found these claims allowable. However, Applicants respectfully submit that

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claims 51, 53, 88 and 89 are allowable even if they are not rewritten as suggested above in view of the above amendments of their base claims and reasons set forth above.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,



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